MANAGING RIVERS ACROSS NATIONAL BOUNDARIES

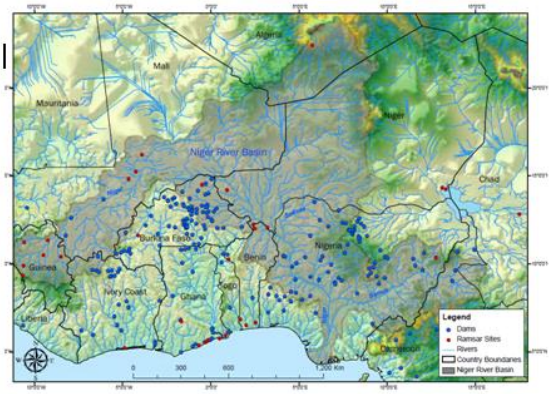
CLIMATE CHANGE AND THE NEED FOR COOPERATIVE MANAGEMENT

CONTEXT

West Africa has 11 major river basins that cross national boundaries; of the 18 countries in the region, only the island of Cape Verde does not share a river with at least one other country. Much of the water resources of individual West African nations, therefore, comes from outside national boundaries, which makes equitable resource allocation and cooperation between upstream and downstream nations a major concern. Often, this cooperation is accomplished through transboundary river basin authorities, of which there are currently five in West Africa, covering the five largest transboundary basins.

FINDINGS

NIGER RIVER BASIN AND ITS RIPARIAN COUNTRIES



Source: UNEP, 2008

While the level of water-related problems varies throughout the region, the overall situation, in general, is worsening throughout West Africa. Freshwater withdrawals for agriculture, industry, and domestic use in the region are expected to triple by 2025. Although many of the stressors on the system are not related to the climate, increasing temperatures and changes in rainfall associated with climate change will likely exacerbate the strain on water availability and quality.

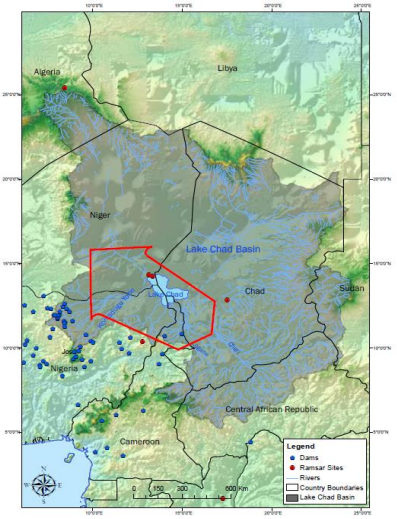
Over the past half century, the water supply of most of the major rivers in West Africa has declined. The reason for this decline is complex, as it is affected by changes in climate (e.g., rainfall) as well as changes in land use, land cover, and population. While the actual amount of decline in the future is uncertain, studies based on climate projections alone suggest river flows could decline by another 20-40 percent by 2050.

Increases in water stress associated with decreases in water supply will affect a number of important sectors, and especially that of food production — farming, livestock, and fisheries. As a result, climate change is expected to alter value chains along rivers, affecting agricultural and fishing goods, in particular. Climate variability and change will also contribute to the dislocation of populations that depend on rivers and water basins, possibly transferring climate stresses to other regions within West Africa.

Although West Africans have begun to adopt a variety of adaptation and coping measures, the strategies available to different populations depend on socioeconomic, political, and environmental factors. These measures will also involve trade-offs and potential impacts on water supplies, now and in the future.

Although it was impossible to rank the adaptive capacity of the five transboundary river basin authorities through an internet-based assessment alone, this study does suggest that each authority has both strengths and weaknesses in terms of addressing climate change, and that all the authorities would benefit from donor and partner government support. Additional on-the-ground research is necessary, however, to identify the exact needs and capacities of each organization.

LAKE CHAD BASIN AND ITS RIPARIAN COUNTRIES

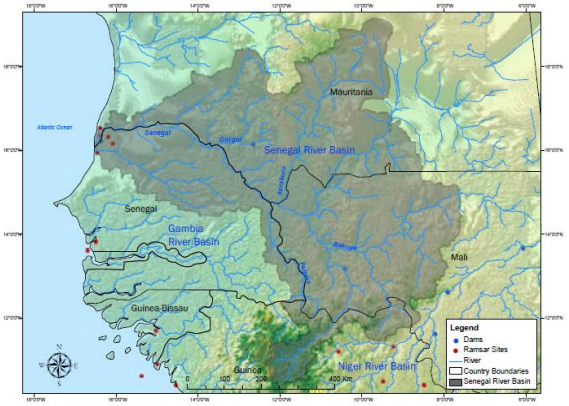


Source: UNEP, 2008B

RECOMMENDATIONS

Owing to the complex relationship between changing climatic conditions and water supply, further research is needed to clarify these causal relationships. For example, research is needed to determine the influence of climate change relative to non-climate factors such as population growth, increased demand for hydropower and irrigation, changes in land use, and to better understand the institutional capacity of all five river basin authorities. Follow-up research is also needed on the smaller transboundary river basins, such as Tanoé and Cross, and the Fouta Djallon Mountains of Guinea, where five of the 11 basins have their source. Development organizations can make valuable contributions in the region by helping to build the capacity of transboundary river basin management institutions, supporting their efforts to collaborate with one another and adaptively co-manage transboundary basins, respond to the dynamic needs of local populations, predict, monitor, and respond to climate variability and extreme events, and address the root causes of water stress related to human activity.

SENEGAL RIVER BASIN AND ITS RIPARIAN COUNTRIES



Source: UNEP, 2008b

ADDITIONAL INFORMATION

This brief highlights key conclusions from El Vilaly, A., and El Vilaly, M. A. S. (2014). *Climate Change and Water Resources in West Africa: Transboundary River Basins.* USAID. Interested readers are invited to review the full paper at http://community.eldis.org/ARCC/.